

Description of Your Report

Your Course Evaluation Report contains up to four sets of items, represented in up to four sections in your report, described below.

Sets of Items

Institutional Items

These eight items are consistent across the University of Toronto. They are comprised of:

- Five rating-scale items which represent institution-wide teaching and learning priorities.
 - ◊ **The institutional composite mean, a mathematical average of these first five items.**
- One rating-scale item on the overall quality of a student's learning experience.
- Two qualitative comment items.

Divisional Items

These items are consistent across your division. They represent division-wide priorities for teaching and learning.

Departmental/Program/Course-Type Items

These items (when applicable) represent further levels of granularity and specificity for teaching and learning priorities within your division (e.g., department, program, course type).

Instructor-Selected Items

These items are optional items which may be selected from the item bank by instructors during the question personalization period.

- **Note that the results from these items are only reported to instructors, as they are primarily intended to function as personal formative feedback.**

Report Sections

The following provide different statistical summaries and representations for your institutional, divisional, and departmental/programmatic items (where appropriate).

Section 1: Course Evaluation Overview

Provides all course evaluation data except instructor-selected items.

Section 2: Response Distributions and Additional Statistics

Provides detailed response distributions.

- The number and relative percentage of respondents providing a given answer is provided, along with a graphical representation.
- This section also reports further statistics for each set of items relative to Section 1.

Section 3: Comparative Data

Provides comparative means for your course as compared to the relevant means across *all other evaluated courses at a particular level of comparison (e.g. division, program)* for each set of items.

Section 4: Instructor-Selected Items

Provides data for optional items that instructors can select from the item bank during the question personalization period. This section is formatted identically to Section 2.

Statistical Terms Used in this Report

Mean: The mathematical average. This measure is the most sensitive, and can be greatly affected by extreme and/or divergent scores.

Median: The middle value when all responses are ordered. This measure is less affected by extreme and/or divergent scores.

Mode: The most frequently occurring score.

Standard deviation: A measure of the "spread" of the data.

Course Name: INTRO MACHINE LEARNING CSC2515H-F-LEC0101 (INPER) Division: SGS Session: F Session Codes: F = First/Fall, S = Second/Winter	Instructor: Amir-massoud Farahmand Section: LEC0101 Delivery Mode: INPER
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Raters	Students
Responded	72
Invited	92

Section 1: Course Evaluation Overview

Part A. Core Institutional Items

Scale: 1 - Not At All 2 - Somewhat 3 - Moderately 4 - Mostly 5 - A Great Deal

Question	Summary	
	Mean	Median
I found the course intellectually stimulating.	4.2	4.0
The course provided me with a deeper understanding of the subject matter.	4.5	5.0
The instructor (Amir-massoud Farahmand) created an atmosphere that was conducive to my learning.	4.4	5.0
Course projects, assignments, tests, and/or exams improved my understanding of the course material.	4.3	4.0
Course projects, assignments, tests and/or exams provided opportunity for me to demonstrate an understanding of the course material.	4.2	4.0
Institutional Composite Mean	4.3	-

Scale: 1 - Poor 2 - Fair 3 - Good 4 - Very Good 5 - Excellent

Question	Summary	
	Mean	Median
Overall, the quality of my learning experience in this course was:	4.1	4.0

7. Please comment on the overall quality of the instruction in this course.

Comments

The Instructor was excellent and coming from a non ML Background I felt comfortable and able to understand the material without sacrificing rigour or depth.

I really appreciated being able to have collaborators for the homework. I think that it helped me learn the material better.

The homework were very comprehensive and I really liked how we could have both a theory as well as a "Hands on" part to actually use the algorithms we learned about.

it is good

This course was interesting but overall suffered from disorganization and too many small assignments.

For example, the fact that assignments were usually distributed in the middle of the night seemed weird even if it didn't affect the course.

Also, having due dates at 5pm is very annoying. It does not prevent people from staying up late when the assignment is due, it just means they have to do that 1 night earlier.

For people who have other commitments or need to take transit etc, the mid-day deadlines just add unnecessary stress.

Also, I think having a clear assignment schedule and sticking to it is worthwhile. Most people are able to appropriately schedule things but only if they know about them. The take-home test dates should have been scheduled in the first week of the course.

In my opinion, this course is very professional, explaining the mathematical principles of machine learning in depth. No doubt I learned a lot. Thank you very much, professors and TAs, for your hard work.

I personally found that the course provides a good balance between theory (mathematical foundation of machine learning models) and application (implementation of algorithms in python). The 3 homework assignments reflected this balance and provided a great opportunity to understand the mathematics behind machine learning algorithms as well as to apply machine learning to specific datasets. I also found that the 3 homework assignments were designed in a comprehensive way that encourages critical thinking and personal learning as the problem sets consisted of extensions and variations of algorithms/topics discussed in class; this helped me apply concepts learned to new topics which leads to a more solid understanding in my opinion. One example is assignment 2 where Poisson regression and locally weighted regression were discussed as variations of the regression problem discussed in class.

The instructor focused on both Micro and Macro aspects of the topics offered in the course – Micro: (mathematical foundations) and Macro (Reading assignments and Q&A assignments). This strategy gave us a broad and well rounded overview of course material.

The final exam was also designed in a comprehensive way that allowed me to revisit the topics and further understand the course material. I generally think that having the exam in take-home format was a good idea since we were tested on some of the latter topics in the course (Bayesian machine learning) with more depth.

Some further remarks/suggestions:

1. Course Project: The course project is a good chance to thoroughly explore an application of machine learning. In order to avoid intensive work in last few weeks of the semester, I would suggest distributing the load of the project throughout the semester (ex: having a progress report halfway in the course). This would encourage us to start earlier and avoid pressure at the end of semester. It will also give us a better idea of how our results are evaluated.

2. The assignments in my opinion were the most important part of the course (in terms of learning experience). I would have personally preferred a little bit more than 2 weeks (maybe 2.5 weeks – similar to what was offered for homework 3) between post date and deadline (in order to manage work responsibilities and other coursework).

3. The class size is very large; this impeded the grading progress and this is very understandable. In the future, I would suggest looking into ways that could help speed up the process a bit (this helps us evaluate our status and performance in the course).

Overall, I am very satisfied with what I have learned in this course . It is a course that encourages us to put in the effort.

Well-paced, good coverage on all the important topics.

The quality of instruction was really good but the course deliverables should have been more spread out through the semester to avoid the high course load in the end.

The course load for this course is way too high. There are 14 deliverables in total. The content of the course is not too difficult overall. However, the workload makes it a very stressful course to take, especially considering assignments from other courses and research duties.

The classes are interactive, with frequent quiz questions and related discussions. The professor is highly motivated to ensure every

Comments
student gathers deep knowledge of the subject, and accommodates for any special requests.
Good but the course overload is too heavy.
Excellent. Professor Farahmand is definitely one of the best professors who have taught me. The workload was a bit lopsided in the temporal domain. For the first few weeks, it was very less but for the last few weeks, it was extremelyyyyyyy heavy. I know this can be tough since this was an introductory course and the instructors have to start from the beginning and can't give much work in the beginning but the middle of the semester could be used to even out stress in the last few weeks. For example, paper reading assignments could have been posted early.
The material was very well presented.
Great course content, however a lot of overlapping deliverable which made it hard to balance with other courses and other responsibilities to my family (as a mature student).
good, but some concept are not welled explained, sometime i felt lost to connect steps together. Not sure why those math proof are relative.
Amir sir is great at teaching and has a in–depth understanding of the course material. The course material was taught at a very decent pace by him, with enough time to ask doubts on piazza as well as revise concepts from previous class before attending the next lectures. Also, classes were interactive because of questions asked in menti in–between the class, although I believe it's frequency can be increased, because if you lose concentration, it brings you back into the class. Hence, a great idea to make class interactive.
Could be more clear with examples and skip less contents with pre–knowledge
The lectures and assignments were well structured and made it easy to grasp the concept.
The professor used Menti which simulated thinking and made the course more interactive. He also always asked for our feedback regarding his teaching and the course material to incorporate our feedback into his teaching. Generally, caring professor and it is pretty clear that he really cares about his students.
The overall quality of the instruction in this course is very high.
<ol style="list-style-type: none"> 1. The course is very well–structured, with clear learning objectives, great lectures and a fair workload. 2. Professor Farahmand is an effective instructor who has a deep understanding of the subject matter and be able to convey the knowledge to students in a clear and effective way. He responses to questions and concerns in a timely and helpful manner. Besides, he maintained a positive, engaging learning environment, encouraged class participation and students collaboration.
Dr Farahmand was a very compassionate and knowledgeable instructor. He presented course content well and was always open to questions and adjusting his teaching style to accommodate the class. I appreciated having access to slides and course videos ahead of time through the course website. I think all of his expectations for the class were fair, and was willing to adjust as needed.
The course load for this course was very heavy. There was a lot of material to get through, which meant that our secondary "tutorial" time slot was nearly always another lecture. This is fine, but in the future I would make this clear on the course calendar so students are aware this course has four hours of lecture each week. The number of assignments and coursework was very heavy. I understand there is a lot of material to get through and different types of assignments (derivation assignments, coding assignments, Q&As, reading assignments, course project, take home test), but it did feel disproportionately high compared to other courses and was very much concentrated near the end of the semester. I would recommend for future semesters to distribute some assignments earlier in the semester (e.g., one paper reading/reflection each month). I would also break the math/coding assignments into shorter, more frequent assignments that can individually be completed in a shorter amount of time.
I have one suggestion as well that could help improve this class for students without a computer science background. I know there are many graduate students outside of the computer science department who are very interested in learning the basics of machine learning from the computer science perspective in order to apply it to their own fields. However, coming from different fields means that the level of statistics and math exposure varies across fields and students. I am not suggesting that the course material be altered in any way, but it would be helpful to have some sort of primer available as supplementary course material for those who are new to the statistics and math terminology used in computer science.
it would be better if the lecturer can put attention throughout the material equally, (no too rush at the end, they are important). sometimes, response on the piazza is not so quick...(especially clarification on hw needed)
The workload of this course is not distributed very well. During the first half of this semester, the workload is pretty low, but the workload explodes at the end of the semester.
A great course but the workload is a little bit too high for incoming students because some of us need to take a few other courses at the same time.
Very Good
The overall quality of the instruction is great. The professor responded to all of our questions clearly and pointed to additional materials for us to have a deeper understanding of the topics.

Comments
Could work on pacing especially for a course that tries to pack so much content in. Spend less time on simple slides and more time on complicated slides, or reduce the syllabus so it is not as rushed. Nice that there was a variety of deliverables but since it cannot even be graded due to low TA:student ratio and high volume of deliverables, what is the point?
All good
The professor was extremely helpful. He always made time to answer questions. He also encouraged students to participate and made the class engaging by allowing us to participate live through Menti.
excellent
Great
Good
The resources available were quite useful, but there were times where the lectures themselves weren't. The lectures didn't always provide more insight than what was written on the slides.
The overall quality of the instruction in this course was great.
The lectures seemed rather disjointed with the level of depth required to complete the homeworks. Overall, I got a survey of different machine learning techniques for someone coming from a non-CS background and after many years out of school. One difficulty associated with the course was that a lot of the deliverables were due towards the end of term and we received feedback very very late. This meant that we were unable to adapt to the feedback given by TAs on assignments in time when working on the next assignment – resulting in potential double dinging for something we do wrong in one assignment.
The pace of teaching is good with explanation, especially when someone asks questions. However, the intuition of each equation should be explained more so that people can follow it more easily and know why the equation is important. People lose track easily when facing equations and symbols. Announce during classes can be repeated online (e.g. piazza) so that more students can know.
Overall this was a good course. However, there are too many assignments and they are all concentrated on the last 2 weeks of the semester. The professor should spread them out more evenly and consider trimming down on some of the bloat in evaluations.
Good.
Great
Very good! The instructor is very patient and understanding!
Course works are great, fair work load and useful exercise.
Overall pace is weird. Instructor doesn't talk loud enough especially with the fact that he is wearing mask at all times. The course sometimes goes extremely slow, which causes lectures to be hard to focus at times.
Overall great course!
good
The instruction was good, I wish there were more resources to understand the difficult proofs/derivations
The course content is very well designed to cover a broad spectrum of topics. This is also very useful to students who already have some ML experience as it helps them deep dive into concepts. Personally, I found the course a bit math-heavy. Overall, a great learning experience and a steep learning curve.
The overall quality was good. Would be helpful if the course can focus more on real-word applications of the algorithms other than the derivations.
Overall it was good – at times it can feel rushed and not particularly clear in terms of what is happening. Although asked if we have any questions, it's hard to participate as it's quite intimidating in such a large class setting at the speed we're going. Improvements in the courses would be clearer timelines for deliverables, or providing instructions earlier on – this will help manage the heavier workload. Also more background math would be helpful – even readings would help with understanding in the course since everyone is so diverse in terms of their own background.
instructions for course assignments were clear.
I believe the overall quality is great! The professor was teaching with a planned format and I get can help with last year's videos if I didn't understand things. I think homeworks are too hard as an intro to machine learning. As a beginner, I would like to have more guidance on how to code machine learning. Too much math for the homework.
Good
The assignments and the other work timeline could have been properly created. Overall, i got a deeper understanding of Machine Learning algorithms with a practical aspect of analysing the models.
The instruction was really good, the math was sometimes a gone over bit too quickly. But slides were clear enough that revising it made it clear.
Amazing course. Professor Amir Massoud covered alot of topics and was considerate enough to make adjustments along the way.

Comments
He asks for continuous feedback which I felt was really important for such an introductory class
There was a lot of in-class interaction through Menti which was really stimulating and made the class more exciting.
The Farahmand is a remarkable instructor. He delves very deeply into the course material, and he places a great deal of emphasis on student engagement and learning. What is most striking about his approach to learning is that he cares a great deal about optimizing the student experience and learning, which is reflected in his approach to teaching.

8. Please comment on any assistance that was available to support your learning in this course.

Comments
Piazza was very helpful
ta is just soso
Project office hours were good, although they could have started earlier so there would have been more time for everyone. Feedback on assignments was very slow which made it challenging to know if the desired structure was being followed.
Overall, the instructor and assistants were very responsive to general questions and specific inquires about assignments. There was a healthy communication process throughout the semester on Piazza.
Course Instructors and TAs were helpful in resolving all the queries.
The assistance was good but the assignments grade should have been released sooner to assess our performance as the course progressed
The project proposal discussions prior to submissions really helped me and my group members in inspecting the shortcomings in our approach, and how we can improve on them to make a good project proposal.
Schedule needs to be adjusted
The project support from TA's could have been better.
have more summary, call back in slide may be helpful. more tutor section on mathematical proof in assignment
Claas. Veru patient and helpful
<ul style="list-style-type: none"> – Personally, I prefer morning classes (around 11 am) especially for math-heavy courses since students might not be as active by 3 pm so they may lose focus during the lecture. Other students might prefer this late timing though. Also, maybe have the lectures in a more bright setting because the room was a little bit dim which made me lose focus easier (the room that was used for tutorial lectures was great in both place and timing). – For students without much math background, it would be helpful if there is some assistance since some students might have not used any math in several years. Having heavy-math material might make these students lose concentration too, – Mentioning applications of the ML algorithms is a great way to stimulate thinking (compared to math derivations). It also helps memorizing the material more than raw theory. The example used in "K-means for Vector Quantization" is a great example of how the material can be interesting and stimulate thinking of the applications of ML. For the months ahead, we might not be able to remember the math derivations as much as remembering applications in real-life examples.
Professor Farahmand is very approachable and available to provide support and guidance to students, both in and out of class. TAs are also helpful for project and assignment consultation. Piazza is a great tool to discuss questions with my peers.
There were supplementary materials online, recordings of previous course lectures posted and office hour support from TAs for assignments and the course project.
It is already good enough.
All the TAs and the professor himself is very helpful and motivating
Pizza has been a great place to ask questions and get response from the professor and TAs.
The Prof. was helpful when you stuck around after class to ask questions. TA Office Hours were also available for Homework. More consultation sessions would have been nice for the Project. I realize there were only a few TAs for such a big class, maybe need more.
All good
Office hours, Piazza, emailing the prof.
Math help
The resources posted on the course website and prerecorded lectures from the pas year were quite useful
I guess this is because the class is so large but there was not much assistance outside of lecture hours to support my learning in

Comments

the course. Talking to other students, others found the course content easier if they already had prior experience with machine learning and could spend significantly less time reviewing lecture content and assignments. TA office hours were only available ahead of homework assignments and only seemed to be available to ask about homework questions and even then there was always a long queue to talk to TAs. Additionally, how you fared in the course was inevitably tied to the groupmates you had (assuming you were not already super familiar with the course content). I would have liked to see model solutions to the assignments because it felt like the homeworks were more there to just check if you can do something rather than there to help you understand and learn from your mistakes.

The homework is confusing and a long time is needed to understand the questions as well as the way to do them. Maybe a tutorial session can be provided to guide students.

The coding assignment does not provide the environment file, thus many time and effort is spent just for configuring the python environment (esp PyTorch)

The TA for the project suggests not using deep learning (because of the training time), which is quite sensible given the time frame of the project.

However, many students are eager to practice deep learning using GPU, so more support should be provided on using GPU remotely (e.g. Google Colab/ teaching lab machines)

Maybe some math knowledge from other courses.

The instructor gets feedback from students and communicates well.

Course slides and additional reading documents

Give him a louder speaker.

HWs are sometimes a little bit too hard. Other than that everything is great!

split the homework, one for one lecture

Assistance was good

The assignments that we worked on were brilliant. Especially the implementation part gives us hands on experience on how in a real-world scenario we build models, tune hyper parameters, compare models, etc. It is very promising to see tangible results as we code the concepts and see theory turning into practicality.

The instructor was helpful. I hope the TAs can spend more time answering our questions though.

Piazza

Project consultation sessions were helpful for us to gain feedback and advice.

I like how we can form groups to discuss homework. This has been so helpful for my homework.

Office hour is good but a little bit too few.

Office hour

Tutorials

The TAs were helpful a lot. But I felt that they were a bit short handed given the class size and multiple course requirements.

However, the overall experience with the TAs was good. They responded promptly on Piazza and were helpful during project consultation as well

Part B: Divisional Items

Scale: 1 - Not At All 2 - Somewhat 3 - Moderately 4 - Mostly 5 - A Great Deal

Question	Summary	
	Mean	Median
FAS001 The instructor (Amir-massoud Farahmand) generated enthusiasm for learning in the course.	4.4	5.0

Scale: 1 - Very Light 2 - Light 3 - Average 4 - Heavy 5 - Very Heavy

Question	Summary	
	Mean	Median
FAS002 Compared to other courses, the workload for this course was...	4.4	4.0

Scale: 1 - Not At All 2 - Somewhat 3 - Moderately 4 - Mostly 5 - Strongly

Question	Summary	
	Mean	Median
FAS003 I would recommend this course to other students.	4.1	4.0

Section 2: Response Distributions and Additional Statistics

This section provides detailed response distributions.

Mean: The mathematical average. This measure is the most sensitive, and can be greatly affected by extreme and/or divergent scores.

Median: The middle value when all responses are ordered. This measure is less affected by extreme and/or divergent scores.

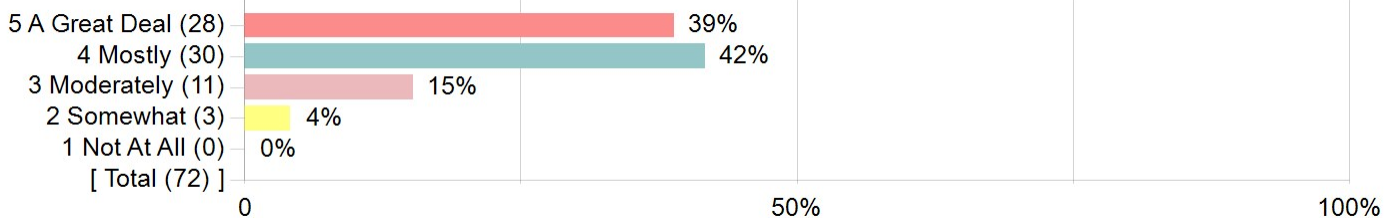
Mode: The most frequently occurring score.

Standard deviation: A measure of the "spread" of the data.

Part A: Core Institutional Items

1. I found the course intellectually stimulating.

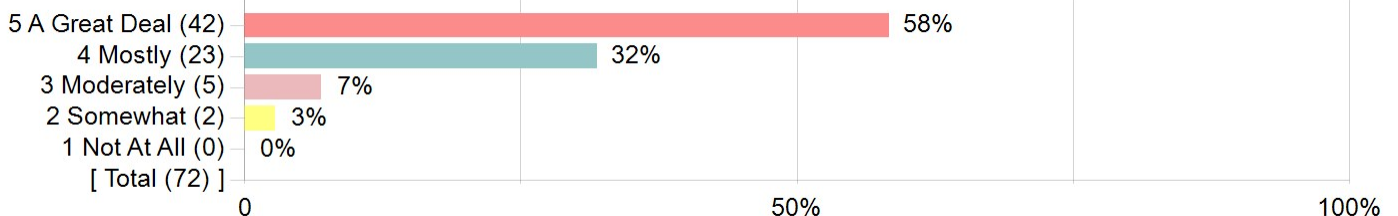
I found the course intellectually stimulating.



Statistics	Value
Mean	4.2
Median	4.0
Mode	4
Standard Deviation	0.8

2. The course provided me with a deeper understanding of the subject matter.

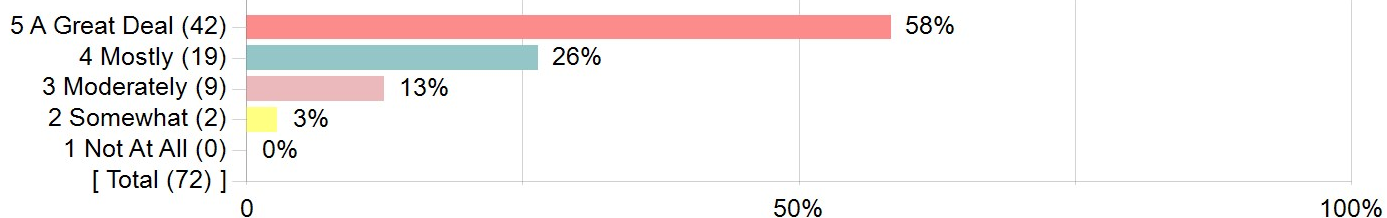
The course provided me with a deeper understanding of the subject matter.



Statistics	Value
Mean	4.5
Median	5.0
Mode	5
Standard Deviation	0.7

3. The instructor (Amir-massoud Farahmand) created a course atmosphere that was conducive to my learning.

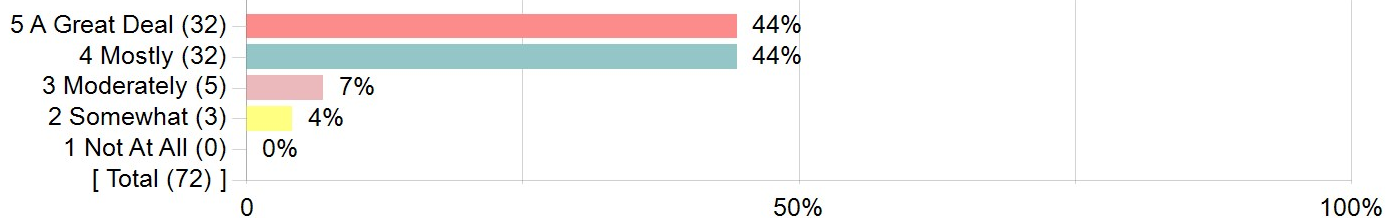
The instructor (Amir-massoud Farahmand) created an atmosphere that was conducive to my learning.



Statistics	Value
Mean	4.4
Median	5.0
Mode	5
Standard Deviation	0.8

4. Course projects, assignments, tests and/or exams improved my understanding of the course material.

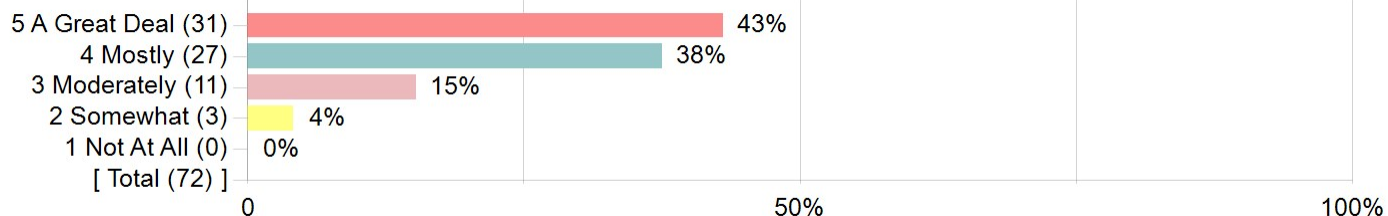
Course projects, assignments, tests, and/or exams improved my understanding of the course material.



Statistics	Value
Mean	4.3
Median	4.0
Mode	5, 4
Standard Deviation	0.8

5. Course projects, assignments, tests and/or exams provided opportunity for me to demonstrate an understanding of the course material.

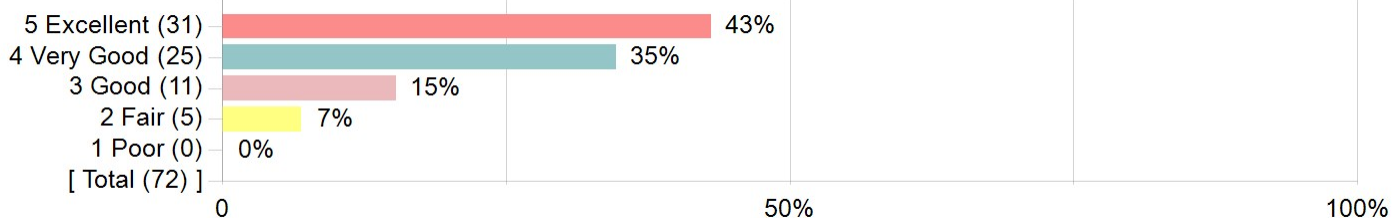
Course projects, assignments, tests and/or exams provided opportunity for me to demonstrate an understanding of the course material.



Statistics	Value
Mean	4.2
Median	4.0
Mode	5
Standard Deviation	0.8

6. Overall, the quality of my learning experience in this course was....

Overall, the quality of my learning experience in this course was:

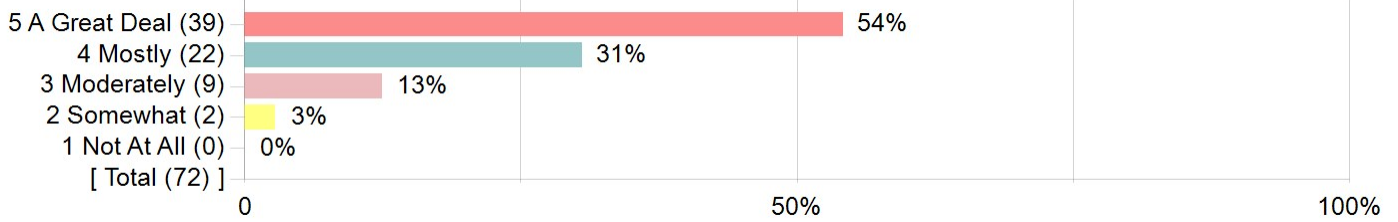


Statistics	Value
Mean	4.1
Median	4.0
Mode	5
Standard Deviation	0.9

Part B. Divisional Items

The instructor (**Amir-massoud Farahmand**) generated enthusiasm for learning in the course.

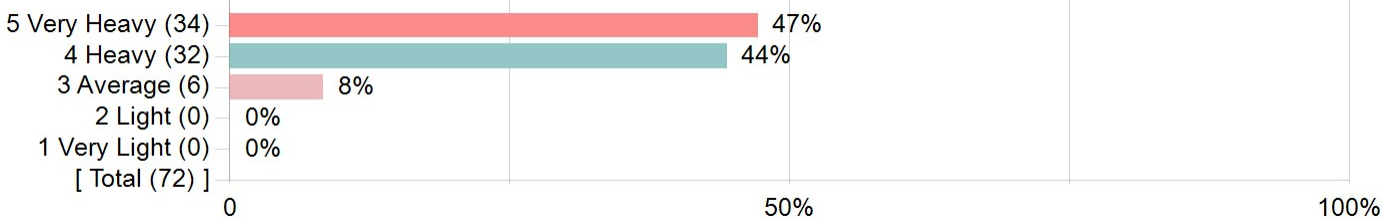
FAS001 The instructor (**Amir-massoud Farahmand**) generated enthusiasm for learning in the course.



Statistics	Value
Mean	4.4
Median	5.0
Mode	5
Standard Deviation	0.8

Compared to other courses, the workload for this course was...

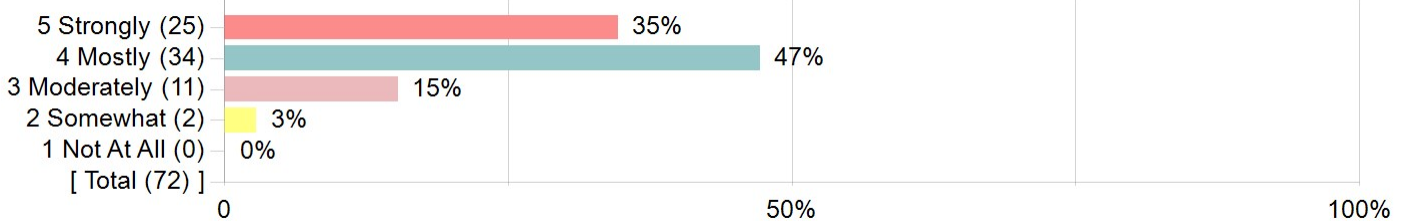
FAS002 Compared to other courses, the workload for this course was...



Statistics	Value
Mean	4.4
Median	4.0
Mode	5
Standard Deviation	0.6

I would recommend this course to other students.

FAS003 I would recommend this course to other students.



Statistics	Value
Mean	4.1
Median	4.0
Mode	4
Standard Deviation	0.8

Section 3. Comparative Data

This section provides overall means for given comparators (e.g., division, department) alongside the mean values for a given course. Note that the comparators are calculated by pooling together all individual student survey responses (e.g., student responses for all of the courses in a department are pooled together and the departmental mean responses calculated from that). The provided comparators are thus a measure of the 'average' student experience for a unit or division; they are not a measure of the 'average' course in a unit or division. This calculation has the effect of giving large courses more 'weight' in the calculation of the comparator means. The effect of this on the calculated comparator varies depending on the relative proportion of large or small courses within a unit or division. As such, the departmental and divisional comparative mean values provided on course evaluations should not be regarded as an absolute and definitive benchmark.

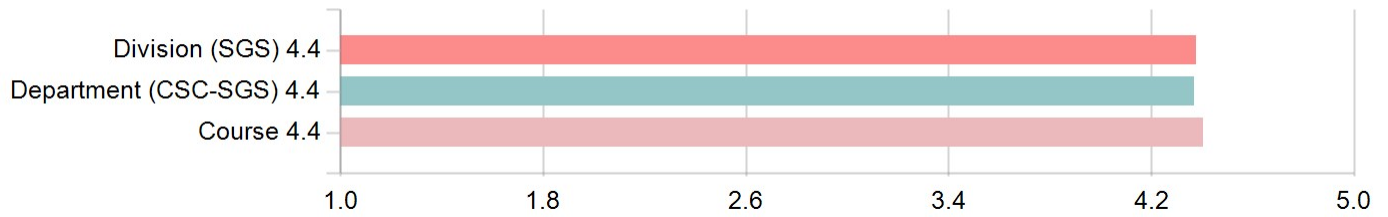
For example, if a department offered only two courses, one with 1000 students who all answered 3.5 and the other with 10 students who all answered 4.5 (so that the means would be 3.5 and 4.5 respectively), then the departmental mean provided on the course evaluations would be 3.51 since the calculation would be $[(3.5 \times 1000) + (4.5 \times 10)] / 1010 = 3.51$ and not $(3.5 + 4.5) / 2 = 4$.

Part A. Core Institutional Items

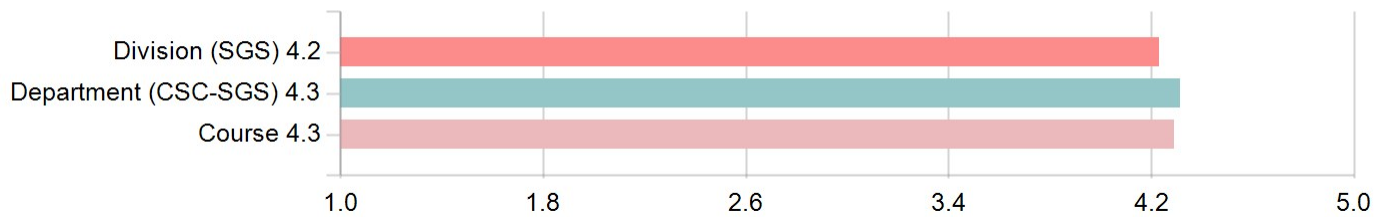
Scale: 1 - Not At All 2 - Somewhat 3 - Moderately 4 - Mostly 5 - A Great Deal



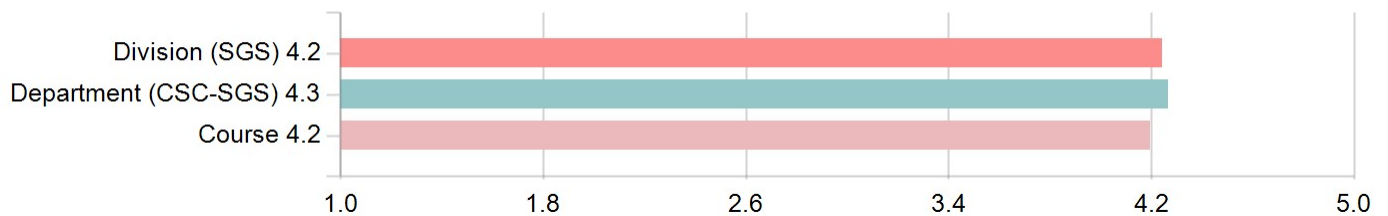
3. The instructor ([Amir-massoud Farahmand](#)) created an atmosphere that was conducive to my learning.



4. Course projects, assignments, tests, and/or exams improved my understanding of the course material.

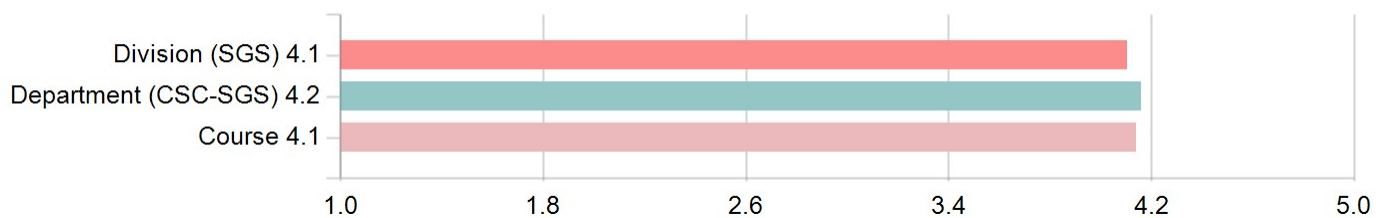


5. Course projects, assignments, tests and/or exams provided opportunity for me to demonstrate an understanding of the course material.



Scale: 1 - Poor 2 - Fair 3 - Good 4 - Very Good 5 - Excellent

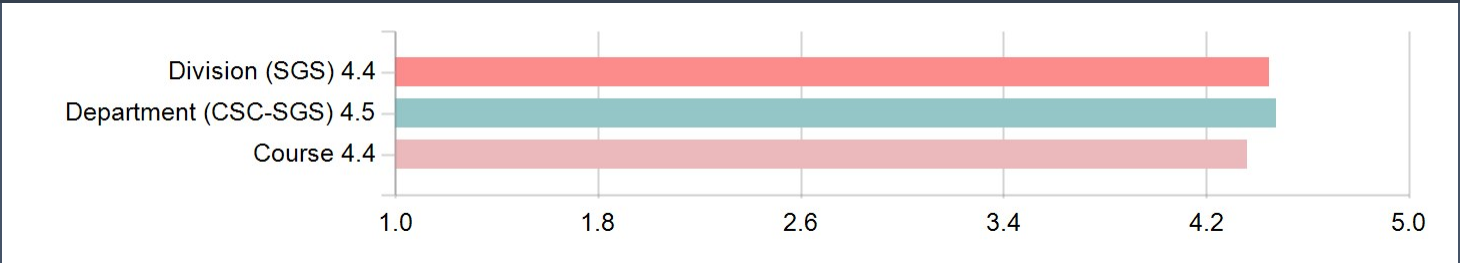
6. Overall, the quality of my learning experience in this course was:



Part B. Divisional Items

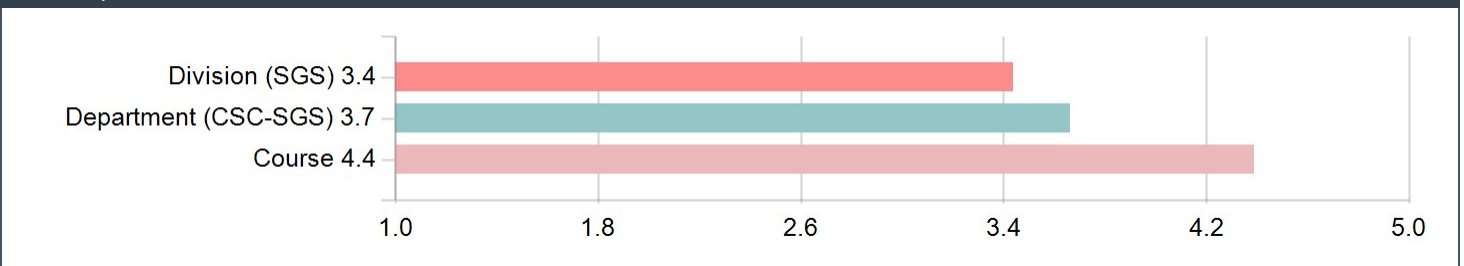
Scale: 1 - Not At All 2 - Somewhat 3 - Moderately 4 - Mostly 5 - A Great Deal

9. The instructor generated enthusiasm for learning in the course.



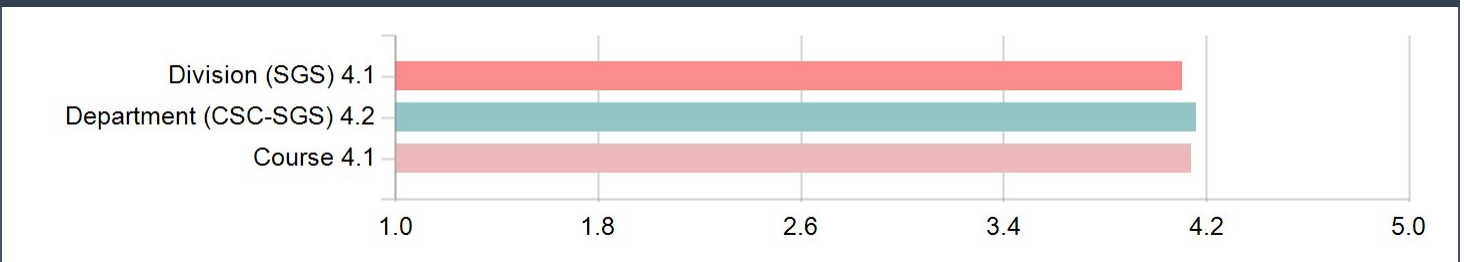
Scale: 1 - Very Light 2 - Light 3 - Average 4 - Heavy 5 - Very Heavy

10. Compared to other courses, the workload for this course was:



Scale: 1 - Not At All 2 - Somewhat 3 - Moderately 4 - Mostly 5 - Strongly

11. I would recommend this course to other students.

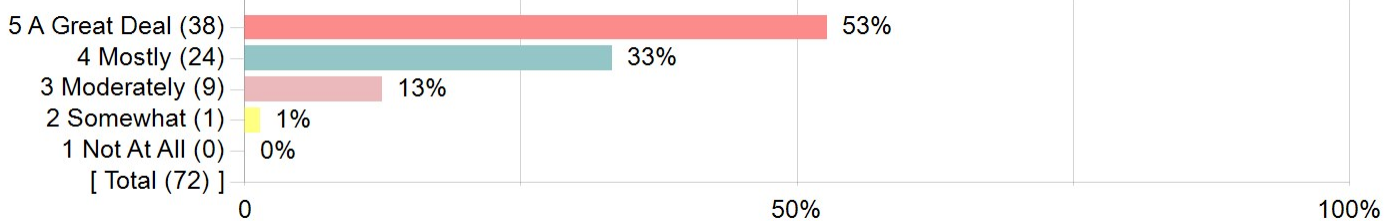


Section 4: Formative Data

These items are optional items which you selected from the item bank during the question personalization period. Note that the results from these items are only reported to you as they are primarily intended to function as personal formative feedback.

C-2. The course instructor ([Amir-massoud Farahmand](#)) explained concepts clearly.

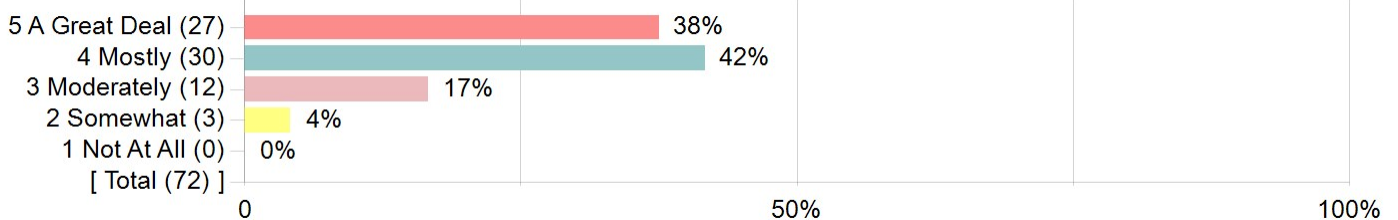
C-2. The course instructor ([Amir-massoud Farahmand](#)) explained concepts clearly.



Statistics	Value
Mean	4.4
Median	5.0
Mode	5
Standard Deviation	0.8

K-3. Course group work improved my understanding of the course material.

K-3. Course group work improved my understanding of the course material.



Statistics	Value
Mean	4.1
Median	4.0
Mode	4
Standard Deviation	0.8

X-14. *Overall, the quality of support the teaching assistant provided in this course was:

